Giemsa Stain Kit

Intended use
Giemsa stain kit is a ready to use combi kit each of Giemsa Stain and Phosphate Buffer (3x buffer) (pH 7.0) for cytogenetics and for histopathological diagnosis.

Summary
Giemsa stain is a mixture of methylene blue, eosin, and azure B. It is specific for the phosphate groups of DNA and attaches itself to where there are high amounts of adenine-thymine bonding. Giemsa stain is mainly used for staining peripheral blood smears and specimens obtained from the bone marrow. It is used to obtain differential white blood cell counts. Giemsa stain is also used in cytogenetics to stain the chromosomes and identify chromosomal aberrations. It is commonly used for G-Banding (Giemsa-Banding). The buffer system consists of two salts: sodium hydrogen phosphate (Na_2HPO_4) and potassium dihydrogen phosphate (KH_2PO_4). Due to their concentration and pH, they provide a stable environment for staining.

Principle
The polychromatic staining solutions, Giemsa, contain methylene blue and eosin. These basic and acidic dyes induce multiple colors when applied to cells. Methanol acts as fixative and also as solvent. The fixative does not allow any further change in the cells and makes them adhere to the glass slide. The basic component of white cells (i.e., cytoplasm) is stained by acidic dye and they are described as eosinophilic or acidophilic. The acidic components (e.g., nucleus with nucleic acid) take blue to purple shades of the basic dyes and they are called basophilic. The neutral components of cell are stained by both the dyes.

Reagents/ contents
Giemsa Stain

Azur II eosin	3.0 g
Azur II	0.8 g
Glycerine	125 mL
Methyl alcohol, absolute	375 mL

Phosphate Buffer (3x buffer)(pH 7.0)

KH2PO4	8 mM
Na2HPO4	6 mM
Final pH (at 25°C)	7.0 ±0.2

**Formula adjusted, standardized to suit performance parameters.

Appearance
Giemsa Stain: Dark blue coloured solution.
Phosphate Buffer: Clear colourless solution

Storage and stability
Store at 15-30°C away from bright light. Use before expiry date on label.

Materials required but not provided
Clean grease-free glass slide, staining rack, blotting paper, immersion oil (Cat. No. 207090110025), and microscope.

Type of Specimen
Clinical specimen: Peripheral blood smears and specimens obtained from the bone marrow.

Procedure

(1:3)
1. Fix the air-dried blood smear with methanol or with Heme Fixative for 15 seconds.
2. Prepare a 1:2 solution of Phosphate buffer 3X (Reagent B) in distilled water.
3. Prepare a 1:3 solution of Giemsa stain (Reagent A) in the above diluted buffer.
4. Stain the slide in diluted stain for 8-10 minutes.
5. Rinse the slide in buffered water.
6. Blot dry or air dry in a vertical position.
7. Observe under microscope, 40X and 100X under oil immersion lens.

OR

(1:20)
1. Fix the air-dried blood smear with methanol or with Heme Fixative for 15 seconds.
2. Prepare a 1:19 solution of Phosphate buffer 3X (Reagent B) in distilled water.
3. Prepare a 1:20 solution of Giemsa stain (Reagent A) in the above diluted buffer.
4. Stain the slide in diluted stain for 45-60 minutes.
5. Rinse the slide in buffered water.
6. Blot dry or air dry in a vertical position.
7. Observe under microscope, 40X and 100X under oil immersion lens.

Interpretation of results

Nuclei:	Blue
Basophilic cytoplasmic components:	Light blue purple
Neutrophilic granules:	Lilac
Eosinophilic granules:	Orange
Mast cell granules:	Deep blue-violet
Nucleoli:	Blue- violet
Red cells:	Pink
Cytoplasm of mature monocytes:	Grey blue

Warranty

This product is designed to perform as described on the label and pack insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

Reference

Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation

Cat No.	Product	Pack Size
207070440250	Giemsa Staining Kit	2 x 250 mL
207070440500		2 x 500 mL
207070210100	Giemsa Stain	100 mL
207070210250		250 mL
207070210500		500 mL
207070211000		1000 mL

Disclaimer

Information provided is based on our inhouse technical data on file, it is recommended that user should validate at his end for suitable use of the product.